

In the Claims:

1. An abrasive composition for polishing substrates comprising:
a plurality of abrasive particles comprising a polydisperse particle size distribution with median particle size, by volume, being about 20 nanometers to about 100 nanometers, a span value, by volume, being greater than or equal to about 20 nanometers, wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 20% by volume of the abrasive particles.
2. An abrasive composition according to claim 1, wherein said abrasive particles comprise a polydisperse particle size distribution with median particle size, by volume being about 20 nanometers to about 100 nanometers, a span value, by volume, being greater than or equal to about 15 nanometers, wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 15% by volume of the abrasive particles.
3. An abrasive composition according to claim 1, wherein said abrasive particles comprise a polydisperse particle size distribution with median particle size, by volume being about 20 nanometers to about 100 nanometers, a span value, by volume, being greater than or equal to about 15 nanometers, wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 10% by volume of the abrasive particles.
4. An abrasive composition according to claim 1, wherein said abrasive particles comprise a polydisperse particle size distribution with median particle size, by volume being about 20 nanometers to about 100 nanometers, a span value, by volume, being greater than or equal to about 15 nanometers, wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 15% by volume of the abrasive particles.
5. An abrasive composition according to claim 1, wherein said abrasive particles comprise a polydisperse particle size distribution with median particle size, by volume being about 20 nanometers to about 100 nanometers, a span

value, by volume, being greater than or equal to about 18 nanometers, wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 20% by volume of the abrasive particles.

6. An abrasive composition according to claim 1, wherein said abrasive particles comprise a polydisperse particle size distribution with median particle size, by volume being about 20 nanometers to about 100 nanometers, a span value, by volume, being greater than or equal to about 20 nanometers, wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 20% by volume of the abrasive particles.

7. An abrasive composition according to claim 1, wherein said abrasive particles comprise a polydisperse particle size distribution with median particle size, by volume, being about 20 nanometers to about 100 nanometers, a span value, by volume, being greater than or equal to about 15 nanometers, wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 20% by volume of the abrasive particles.

8. An abrasive composition according to claim 1, wherein said abrasive particles comprise silica.

9. An abrasive composition according to claim 1, wherein said abrasive particles comprise colloidal silica.

10. An abrasive composition according to claim 1, wherein said abrasive particles comprise, alumina, aluminum, ammonia or potassium cations bonded thereto.

11. An abrasive slurry composition for polishing substrates comprising:
a plurality of abrasive particles comprising a polydisperse particle size distribution with median particle size, by volume, being about 20 nanometers to about 100 nanometers, and a span value, by volume, being greater than or equal to 20 nanometers, wherein a fraction of said particles

greater than about 100 nanometers is less than or equal to about 20% by volume of the abrasive particles; and

a solution having one or more chemical reactants.

12. An abrasive slurry according to claim 11, wherein said abrasive particles comprise a polydisperse particle size distribution with median particle size, by volume, being about 20 nanometers to about 100 nanometers, a span value, by volume, being greater than or equal to about 15 nanometers, wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 10% by volume of the abrasive particles.

13. An abrasive slurry according to claim 11, wherein said abrasive particles comprise a polydisperse particle size distribution with median particle size, by volume, being about 20 nanometers to about 100 nanometers, a span value, by volume, being greater than or equal to about 18 nanometers, wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 20% by volume of the abrasive particles.

14. An abrasive slurry according to claim 11, wherein said abrasive particles comprise a polydisperse particle size distribution with median particle size, by volume, being about 20 nanometers to about 100 nanometers, a span value, by volume, being greater than or equal to about 15 nanometers, wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 20% by volume of the abrasive particles.

15. An abrasive slurry according to claim 11, wherein said abrasive particles comprise silica.

16. An abrasive slurry according to claim 11, wherein said abrasive particles comprise, alumina, aluminum, ammonia or potassium cations bonded thereto.

17. A method for polishing substrates with an abrasive composition comprising:

providing a substrate to be polished;
and polishing the substrate using a plurality of abrasive particles comprising, a polydisperse particle size distribution with median particle size, by volume, being about 20 nanometers to about 100 nanometers, a span value, by volume, being greater than or equal to about 20 nanometers, and wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 20% by volume of the abrasive particles.

18. A method according to claim 17, wherein said abrasive particles comprise a polydisperse particle size distribution with median particle size, by volume being about 20 nanometers to about 100 nanometers, a span value, by volume, being greater than or equal to about 15 nanometers, wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 10% by volume of the abrasive particles.

19. A method according to claim 17, wherein said abrasive particles comprise a polydisperse particle size distribution with median particle size, by volume being about 20 nanometers to about 100 nanometers, a span value, by volume, being greater than or equal to about 18 nanometers, wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 20% by volume of the abrasive particles.

20. A method according to claim 17, wherein said abrasive particles comprise a polydisperse particle size distribution with median particle size, by volume being about 20 nanometers to about 100 nanometers, a span value, by volume, being greater than or equal to about 15 nanometers, wherein a fraction of said particles greater than about 100 nanometers is less than or equal to about 20% by volume of the abrasive particles.

21. A method according to claim 17, wherein said abrasive particles comprise silica.

22. A method according to claim 17, wherein said abrasive particles comprise, alumina, aluminum, ammonia or potassium cations bonded thereto.